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## Design and test results for a canted-cosine-theta dipole subscale magnet series

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The U.S. Magnet Development Program (USMDP) is developing Canted-Cosine-Theta (CCT) magnet technology for future high field accelerator magnets. The CCT concept limits Lorentz force accumulation by placing turns within precision-machined grooves that are separated by ribs and a spar that intercept forces, substantially reducing the stress in the conductor. CCT technology has been advanced through the fabrication and testing of three Nb<sub>3</sub>Sn CCT (CCT3/4/5) dipole magnets, with the final magnet reaching 88% of short sample current and more than 9.1 T field in a 90 mm aperture. A subscale CCT magnet program has been initiated in order to better understand and reduce training in this type of magnet. The goal of the nominal subscale design is to reach a similar stress state as for the CCT3/4/5 series at the short sample limit, with a reduced coil size in order to achieve reduced fabrication and testing time for dedicated training studies. The stress state in the CCT magnets can be modified by the choice of design parameters and configurations. The test results for various subscale magnets with different design configurations will be presented.

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**Primary authors:** ARBELAEZ, Diego (Lawrence Berkeley National Laboratory); BOGDANOF, Timothy (Lawrence Berkeley National Laboratory); BROUWER, Lucas (Lawrence Berkeley National Laboratory); CASPI, Shlomo; FERRACIN, Paolo; HAFALIA, Aurelio (Unknown); KRUTULIS, Mark (Lawrence Berkeley National Laboratory); LEFEVERS, Kevin (Lawrence Berkeley National Laboratory); MARCHEVSKY, Maxim; MCCOMBS, Kyle (Lawrence Berkeley National Laboratory); MEMMO, Robert (Lawrence Berkeley National Laboratory); MYERS, Cory (Lawrence Berkeley National Lab); PRESTEMON, Soren; REYNOLDS, Matthew (Lawrence Berkeley National Laboratory); RUDEIROS FERNANDEZ, Jose Luis; SHEN, Tengming (Lawrence Berkeley National Lab); SWANSON, James (Lawrence Berkeley National Laboratory); TAYLOR, Jordan (Lawrence Berkeley National Laboratory); TEYBER, Reed (Lawrence Berkeley National Laboratory); TURQUETI, Marcos (Lawrence Berkeley National Laboratory); VALLONE, Giorgio (Lawrence Berkeley National Lab. (US))

**Presenter:** ARBELAEZ, Diego (Lawrence Berkeley National Laboratory)

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